

Work Order ID 145351

Thursday, May 05, 2016 1:41:08 PM

646.9710

145351

Page 1

Item ID: 646.9710

Revision ID:

Item Name: Body

Start Date: 5/13/2016 Start Qty: 12.00

Required Date: 5/21/2016 Req'd Qty: 12.00

Reference:

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

Customer:

MAY 06 2016

Approvals:

Process Plan: MC

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
646.9700	D2

100

0.00

100

Bandsaw

Jeaspa Bandsaw

BAND SAW

Memo

Cut Blank at 7.425"

0.00

12

0

DAS
20
9-89

16-05-19

110

0.55

110

HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

1-Machine per folio FB130

DWG REV: D

FOLIO REV: AA

2- deburr and break all sharp edges

7.20

B.a 16/05/26

DAS
08
9-85

12

0

DAS
44
9-89

16-05-20

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause				FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : _____							

Work Order ID 145351

Thursday, May 05, 2016 1:41:08 PM

145351

Page 2

Item ID: 646.9710

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Body

Start Date: 5/13/2016 Start Qty: 12.00

12

Cust Item ID:

Required Date: 5/27/2016 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC2- Inspect parts off machine FAI/FAIB	0.00				12	0		DAS 44 9-89 16-05-20
120									
QC	Memo	0.12							
Quality Control									
130	QC8- Inspect parts - second check	0.00				12	0		DAS 14 9-89 16/05/29
130									
QC	Memo	0.24							
Quality Control									
140	Outsource process-Anodize per QSI017 4.1.10.1	0.00				12			DAS 13 9-89
140									
Outsource4	Memo	2,160.00							
Outsource process - Anodize	Issue P/O to ATG : 32573							JUN 02 2016	
	1- Black Anodize as per Dwg 646.9700								
	2- PRIME AS PER DWG, SEE NOTE #2								
	Certification of Conformity is required								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : ☐							

Work Order ID 145351

Thursday, May 05, 2016 1:41:08 PM

145351

Page 3

Item ID: 646.9710

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Body

Start Date: 5/13/2016 Start Qty: 12.00

12

Cust Item ID:

Required Date: 5/27/2016 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

Receive & Inspect for Damage & Mat'l Certs

0.00

150

Packaging

Memo

0.24

Packaging

Dr SP/6-6-13

155

QC5- Inspect part completeness to step on W/O

0.00

155

QC

Memo

0.24

Quality Control

12

DAS
38
9-89
JUN 15 2016

180

Identify as per dwg & Stock Location

0.00

180

Packaging

Memo

0.12

Packaging

IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV

12

JUN 15 2016

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
				Completed By					
				Lead hand / Supervisor Approval Verification					
				QC / QA Coordinator Approval					

Root Cause				FAULT CATEGORY			
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong		
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions		
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance		
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect		
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing		
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved		
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing		
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish		
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread		
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence		
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____					
Misidentified ☐	☐ Past Due						

Work Order ID 145351

Thursday, May 05, 2016 1:41:08 PM

145351

Page 4

Item ID: 646.9710

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Body

Start Date: 5/13/2016 Start Qty: 12.00

12

Cust Item ID:

Required Date: 5/27/2016 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

1.20

Quality Control

MLJ

JUN 16 2016

Jm

16/06/15

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		

Root Cause				FAULT CATEGORY			
Environment ☐	☐ No Re-verification	Pressure/Forced ☐		Temperature/Cure ☐		Power Loss/Surge ☐	
Design ☐	☐ Operator	Bending ☐		Set-up ☐		Folio/Program ☐	
Doc/Data ☐	☐ Offset/Setup	Centre Not Concentric ☐		BOM/Route ☐		Grain ☐	
Equip/Tooling ☐	☐ Supplier	Cracks ☐		Broken/Damage/Defect ☐		Weld ☐	
Handling/Pre ☐	☐ Training	Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐		Wrong Stock Pulled ☐	
Material ☐	☐ Use for Testing	Cuffs ☐		Contamination ☐		Out of Sequence ☐	
Internal Transport ☐	☐ Poor Information	Crushing ☐		Countersink ☐		Off-set ☐	
Tribal Knowledge ☐	☐ Rushing	Heat Treat ☐		Cut Too Short ☐		Mislabeled ☐	
LOA ☐	☐ Product Improvement	Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐		Fit/Function ☐	
Substation ☐	☐ Process Improvement	Marks/Chatter ☐		Drill Holes ☐		Misaligned/off center ☐	
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____					
Misidentified ☐	☐ Past Due						

Picklist Print

Thursday, May 05, 2016 1:41:11 PM

Page 1 / 1

Work Order ID: 145351

145351

Parent Item: 646.9710

646.9710

Parent Item Name: Body

Start Date: 5/13/2016

Required Date: 5/27/2016

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP REV:A NEW ISSUE 12/10/04 JFS VERIFY BY: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6B5.000X1.000		Purchased	No			100	f	24.1912	0.62	7.831579			DAS
M7075T6B5 000X1 000									**	<u>7.667'</u>		20	16-05-19
/ 7075-T6 BAR 5.000" X 1.000"													

Location

Loc Qty

Loc Code

MAT005

24.1912

M127481

20.9772

M134164

3.214

7.667'

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

DART AEROSPACE LTD		Work Order:	145351
Description: Body		Part Number:	646.9710
Inspection Dwg: 646.9700 Rev: <i>E.D2411</i>		Page 1 of 2	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.13 x 45°	+/-0.010 x 0.5°	.130			FK-04	Vern -
1.500	+/-0.005	1.499			"	"
0.352	+0.005/-0.000	.353			"	"
0.10 x 45°	+/-0.010 x 0.5°	.0985			"	"
0.875	+/-0.005	.879			"	"
0.700	+/-0.005	.698			"	"
5.500	+/-0.005	5.500			"	"
0.660	+/-0.005	.657			H-G.	31006.
0.660	+/-0.005	.659			↑	
0.278	+/-0.002	.277				
0.339	+/-0.002	.3375				
0.352	+/-0.002	.3505				
0.372	+/-0.002	.371				
1.067	+/-0.002	1.066				
2.608	+/-0.002	2.6065				
2.750	+/-0.002	2.748				
2.892	+/-0.002	2.890				
3.348	+/-0.002	3.346				
3.597	+/-0.002	3.5955				
3.847	+/-0.002	3.8455				
0.351	+/-0.002	.3515				
0.544	+/-0.002	.5435				
2.195	+/-0.002	2.1955				
2.304	+/-0.002	2.303				
2.451	+/-0.002	2.452				
2.639	+/-0.002	2.638				
3.395	+/-0.002	3.3955				
3.495	+/-0.002	3.494				
4.551	+/-0.002	4.5505				
4.595	+/-0.002	4.595				
4.687	+/-0.002	4.6855				
4.734	+/-0.002	4.7325				
6.651	+/-0.002	6.6495			↓	↓

DART AEROSPACE LTD		Work Order:	145357
Description: Body		Part Number:	646.9710
Inspection Dwg: 646.9700 Rev: 0 D24.11		Page 2 of 2	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.201	+0.005/-0.001	.203	✓		FK-04	Vern.
Ø0.177	+0.005/-0.001	.178	✓		"	"
7.026	+/-0.005	7.024	✓		H-G	310cc
4.245	DAS +/-0.005	4.243	DAS		"	"

Measured by:	44 9-89	Audited by:	14 9-39	Preliminary Approval:	
Date:	16-05-20	Date:	16/05/21	Date:	

Rev	Date	Change	Revised by	Approved
A	13.06.03	New Issue	KJ	
B	13.07.18	Dwg Rev updated	KJ	
C	14.01.21	Dwg Rev updated	KJ	

Δ ~~407~~ +/-0.005

• ~~409~~ +/-0.005



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

ENGINEERING CHANGE NOTICE NO.

05360

SHEET 1 OF 1

DWG NO. 646.9700

REV: D

PREPARED BY J. BECKER

DATE: 03/24/16

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: CUTTER SUB ASSY

APPROVED BY: ENGR *[Signature]*

MFG *[Signature]*

QC *[Signature]*

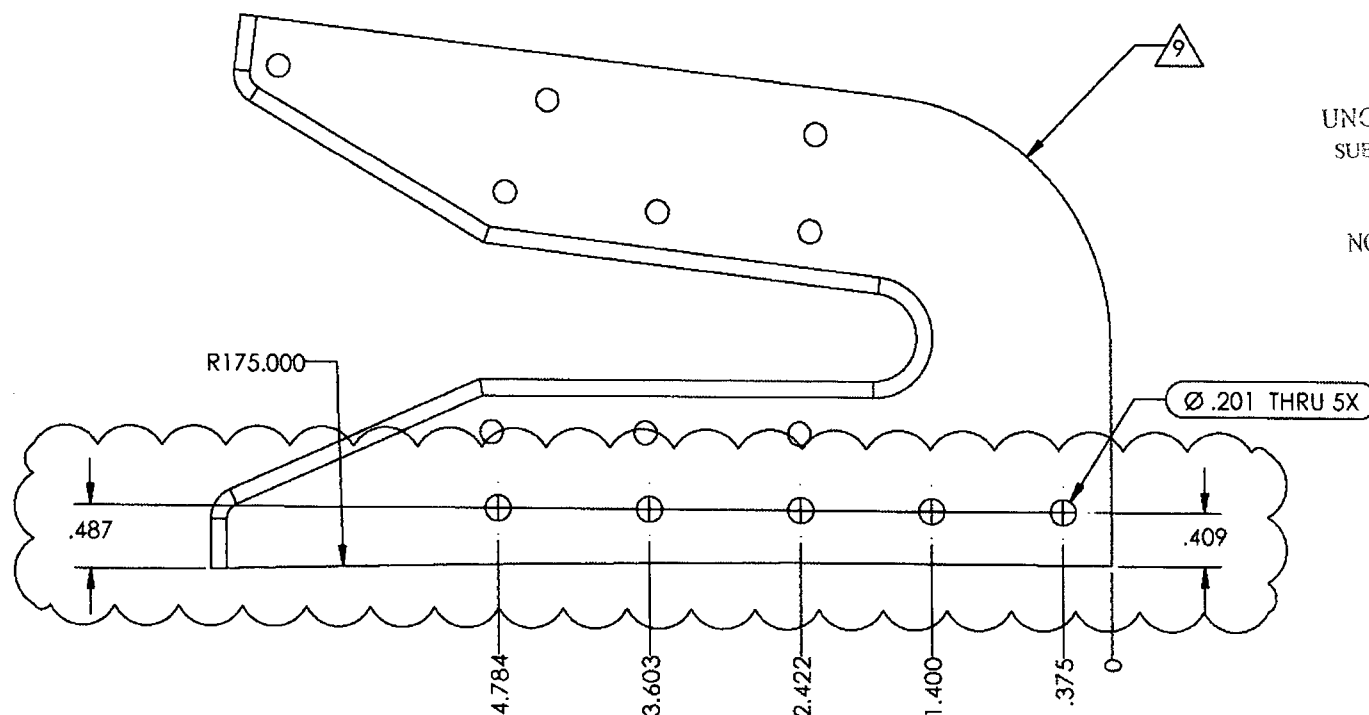
EFF. CURRENT ORDER

REASON: REVISED DIMENSIONS

ECR: N/A

ACTION ITEM:
1.

SHEET 7, ZONE C3 IS:



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER NO. 145351 *ML5*
16-05-06

DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

☐ YES ☒ NO



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

ENGINEERING CHANGE NOTICE NO.

05345

SHEET 1 OF 1

DWG NO. 646.9700

REV: D

PREPARED
BY

J. GARDINER

DATE: 03/15/16

EFFECT ON DWG

☐ INC. ☒ UNINC.

DWG TITLE: CUTTER SUB ASSY

APPROVED BY:

ENGR.

MFG

QC

EFF.

CURRENT ORDER

REASON: REVISED NOTES

ECR:

N/A

ACTION ITEM:

1.

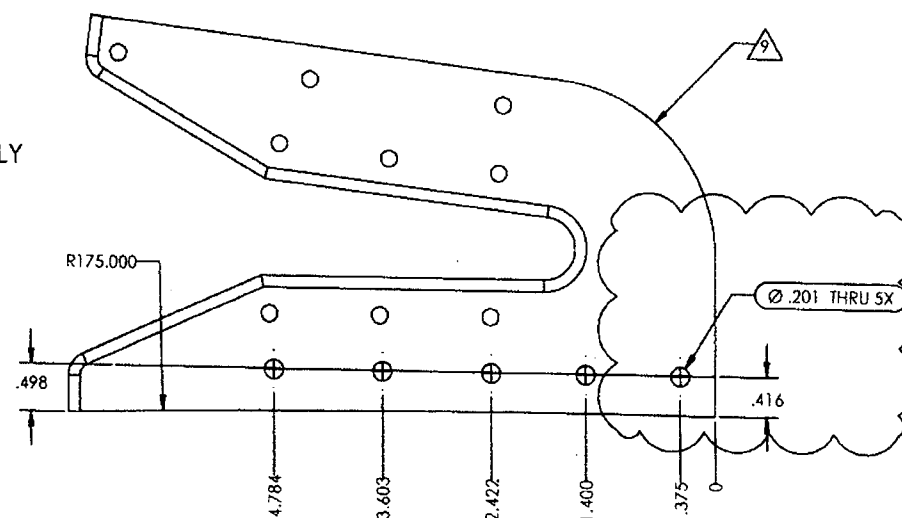
SHEET 1, ZONE A6 IS:

NOTES:

IS

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH IAW MPP-172 SECTION 2.1, 3.3 & 4.3.
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MPP-172 SECTION 3.3; 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
6. IDENTIFY IAW MPP-120
- 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- 9 ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.

SHEET 7, ZONE C5 IS:



DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

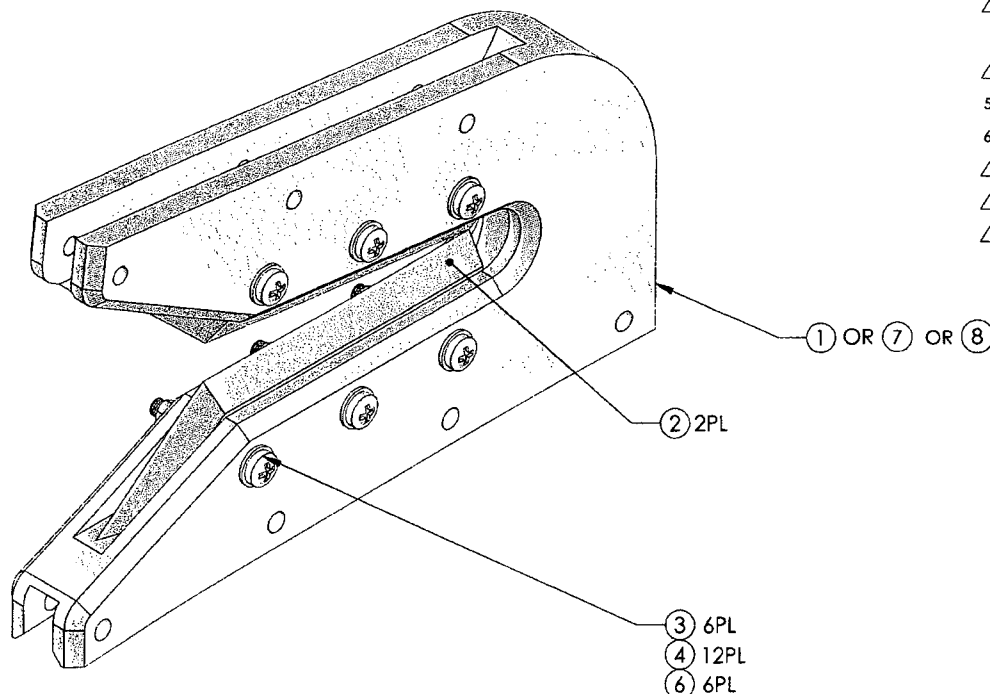
☐ YES ☒ NO

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	LAST PROTOTYPE REVISION - P82		N/C
HC	INITIAL RELEASE	03/29/09	P. BRAVO
A	INCORPORATED ECN 037-4, 03886, 03913	06/06/13	P. BRAVO
B	INCORPORATED ECN 039167	07/03/13	P. BRAVO
C	INCORPORATED ECN 040391	08/05/13	P. BRAVO
D	INCORPORATED ECN 043291	02/26/14	P. BRAVO

NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH IAW MPP-172 SECTION 3.3 & 4.3.
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MPP-172 SECTION 3.3; 1-2 MIL MAX
- 5 DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
- 6 IDENTIFY IAW MPP-120
- 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- 9 ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.



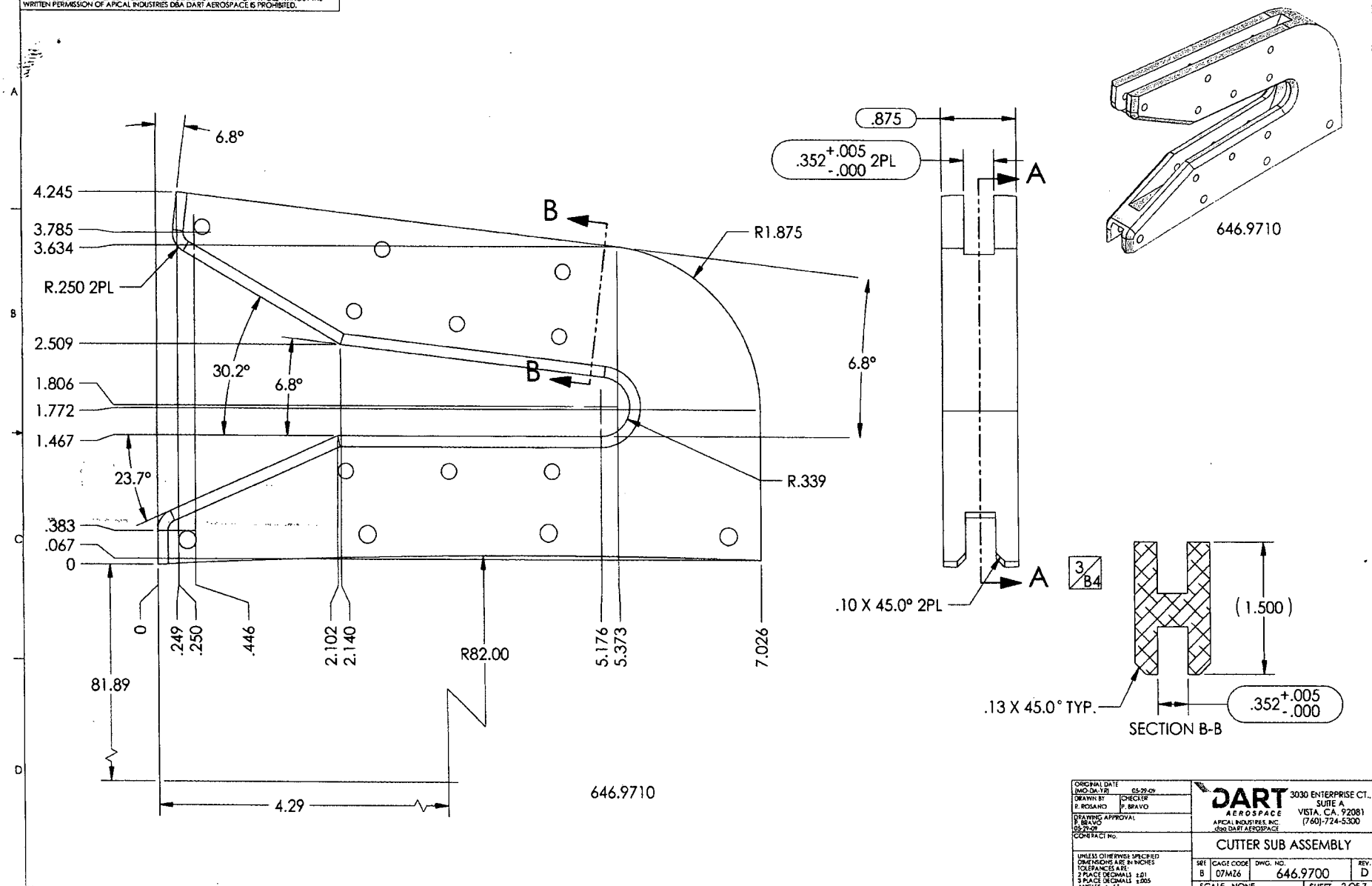
646.9701 SHOWN
646.9702 & 646.9703 TYP

UNINCORPORATED ECN(S)

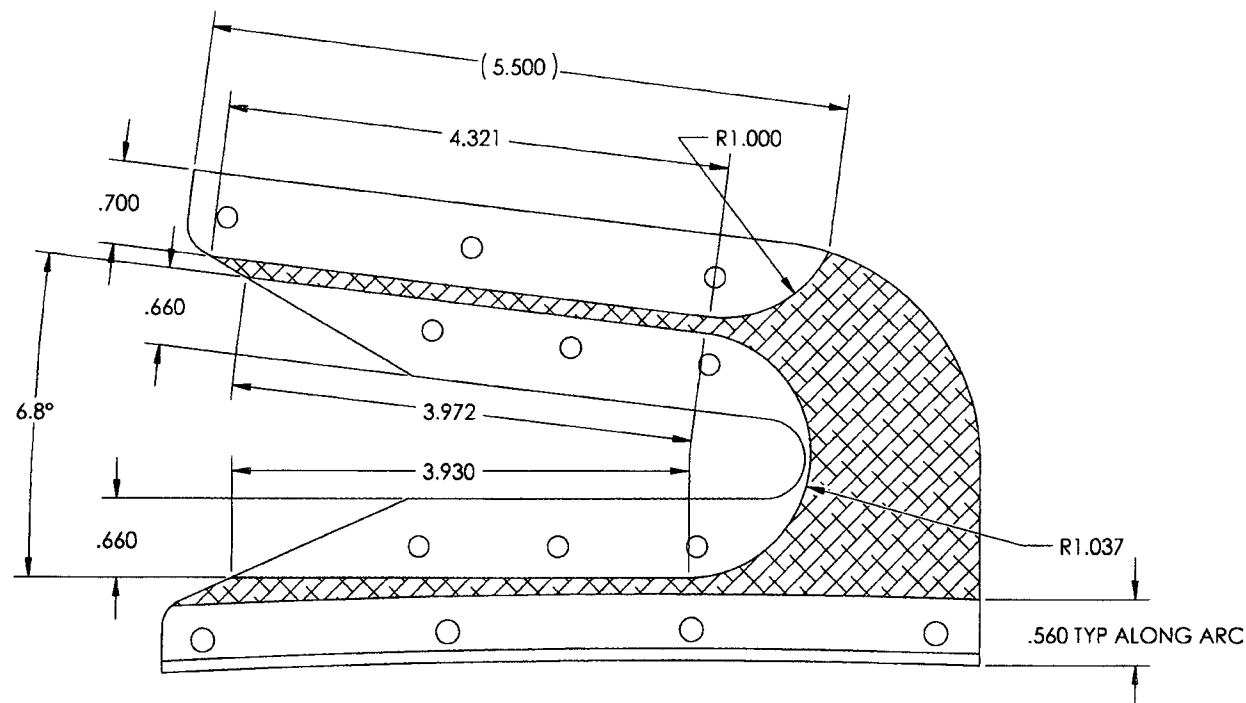
05345, 05360,

1			8	646.9713	BODY			
	1		7	646.9712	BODY			
6	6	6	6	601.1541	LOCKNUT	MS21042108		
A/R	A/R	A/R	5	601.2045	RTV, LOCITE 598			
12	12	12	4	601.2764	WASHER	HA-S1147HMS2P		
6	6	6	3	601.2765	SCREW	MS27039-0619		
2	2	2	2	646.9711	BLADE			
			1	1	646.9710	BODY		
X					646.9703	CUTTER SUB ASSY		
X					646.9702	CUTTER SUB ASSY		
	X				646.9701	CUTTER SUB ASSY		
9703	9703	9703	9701	FIND #	PART #	DESCRIPTION	MAT'L	SPEC.
QTY				PARTS LIST				
NEXT ASSY (S)				ORIGINAL DATE 05-29-09				
646.9600				DRAWN BY CHITCZER				
				P. POSANO				
				P. BRAVO				
				DRAWING APPROVAL				
				P. BRAVO				
				05-29-09				
				CONTRACT NO.				
				UNLESS OTHERWISE SPECIFIED				
				DIMENSIONS ARE IN INCHES				
				TOLERANCES ARE:				
				2 PLACE DECIMALS .01				
				3 PLACE DECIMALS .003				
				ANGLES .1 .5				
				DART AEROSPACE 3030 ENTERPRISE CT., SUITE A, VISTA, CA, 92081 (760)-724-5300				
				CUTTER SUB ASSEMBLY				
				SER. CAGL CODE DWS. NO. 646.9700 REV. D				
				SCALE NONE SHEET 1 OF 7				

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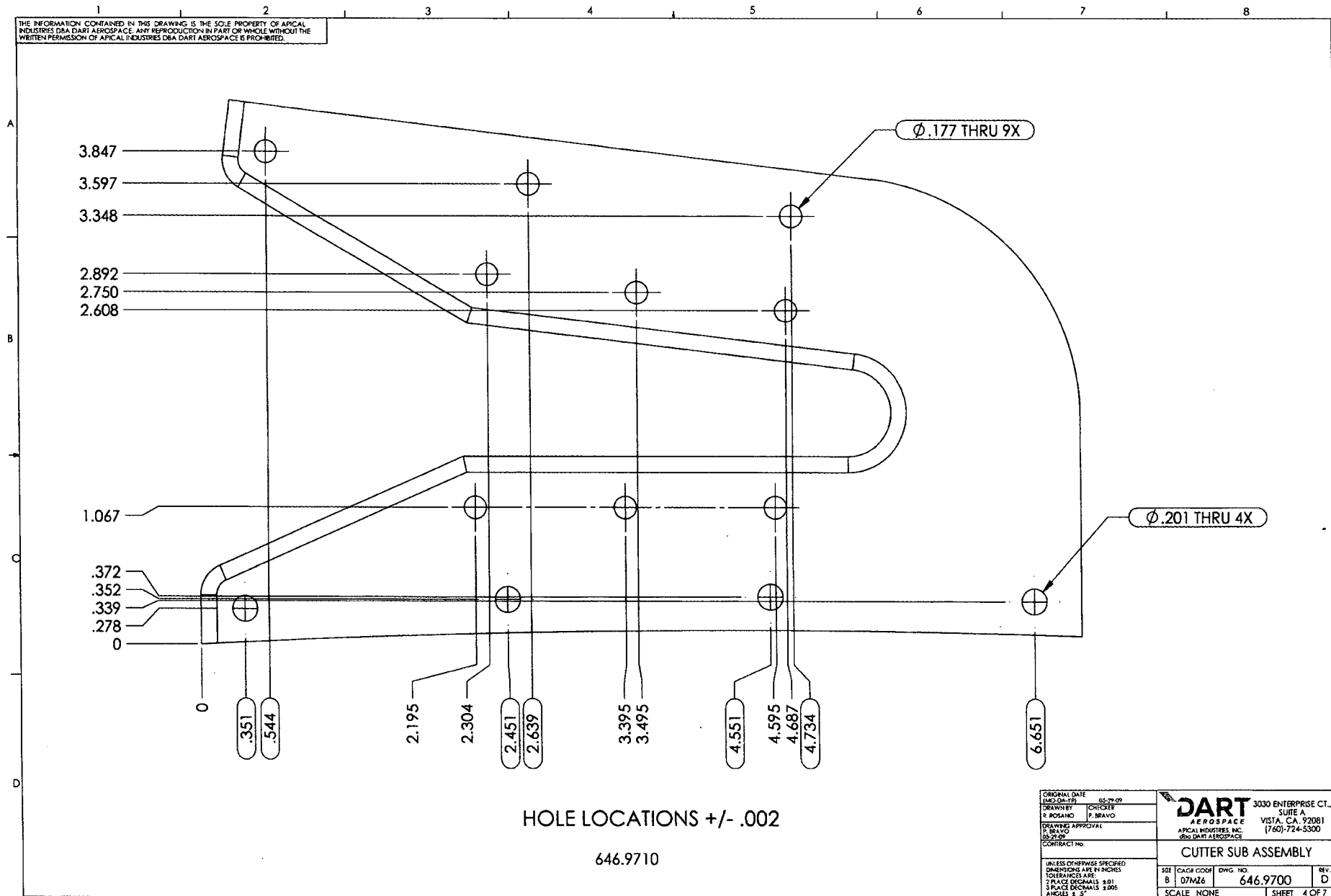


SECTION A-A $\frac{2}{C6}$

646.9710

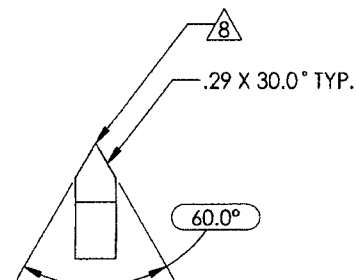
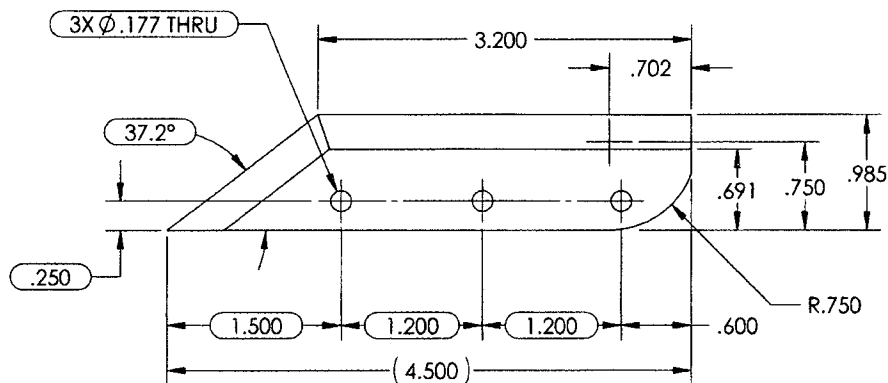
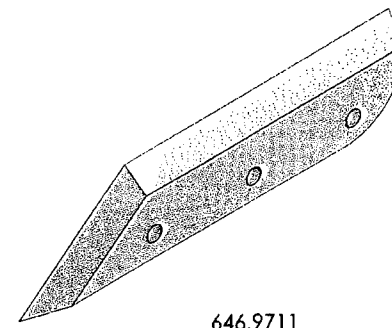
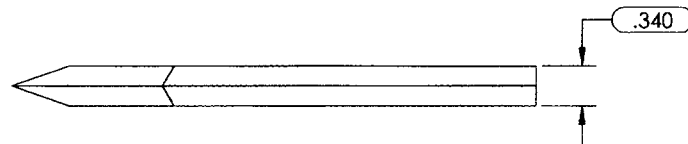
ORIGINAL DATE 140-DA-159 05/27/08		3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300	
DRAWN BY R. ROLAND P. BRAVO		APICAL INDUSTRIES, INC. DBA DART AEROSPACE	
DRAWING APPROVAL P. BRAVO 05/27/08		CUTTER SUB ASSEMBLY	
CONTRACT NO.		SCALE NONE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SHEET B 07M16	REV D
DWG. NO. 646.9700		SHEET 3 OF 7	

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ORIGINAL DATE 10-02-09		ISSUED BY P. BRAVO		3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760)-724-5300	
DRAWN BY R. ROSANO		CHECKED BY P. BRAVO		DART AEROSPACE APICAL INDUSTRIES, INC. DBA DART AEROSPACE	
DRAWING APPROVAL P. BRAVO 05-27-09		CONTRACT NO.		CUTTER SUB ASSEMBLY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS .001 3 PLACE DECIMALS .0005 ANGLES ± .5°		302 CAGE CODE B 07M26		DWG. NO. 646.9700	
SCALE NONE		SHEET 4 OF 7		REV. D	

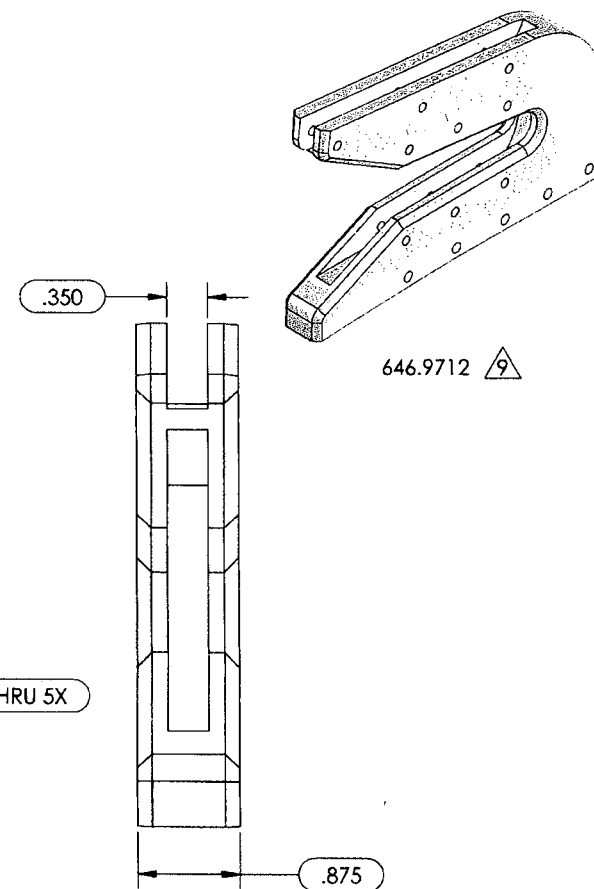
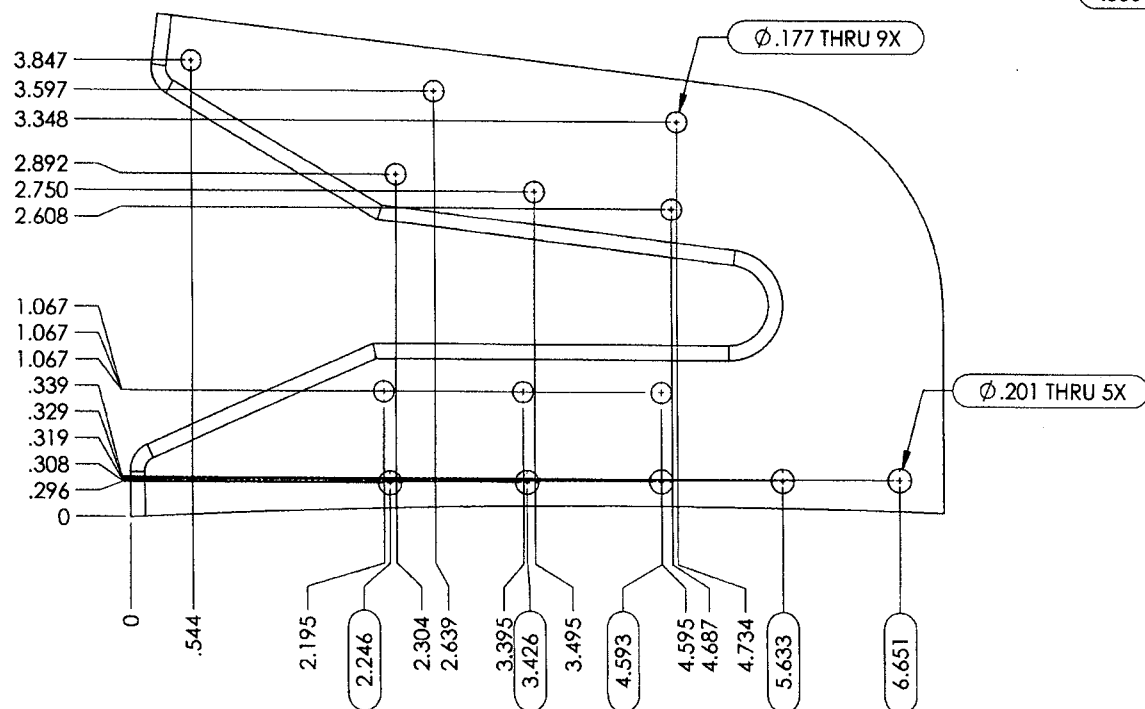
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES DBA DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES DBA DART AEROSPACE IS PROHIBITED.



646.9711

ORIGINAL DATE 1/10/04-10		05-26-05		DART AEROSPACE 3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760)-724-5300	
DRAWN BY R. ROSANO		CHECKED BY P. BRAVO		APICAL INDUSTRIES, INC. DBA DART AEROSPACE	
DRAWING APPROVAL P. BRAVO		05-27-05		CUTTER SUB ASSEMBLY	
CONTRACT NO.					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.3°		SRT B	CAGE CODE 07M26	DWG. NO. 646.9700	REV. D
SCALE: NONE		SHEET 5 OF 7			

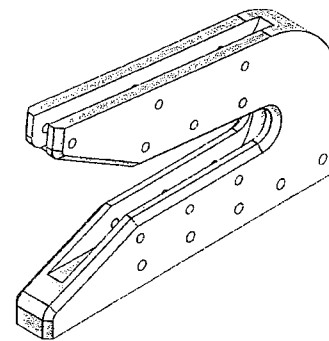
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES DBA DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES DBA DART AEROSPACE IS PROHIBITED.



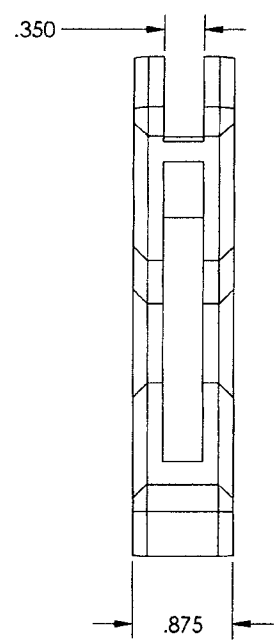
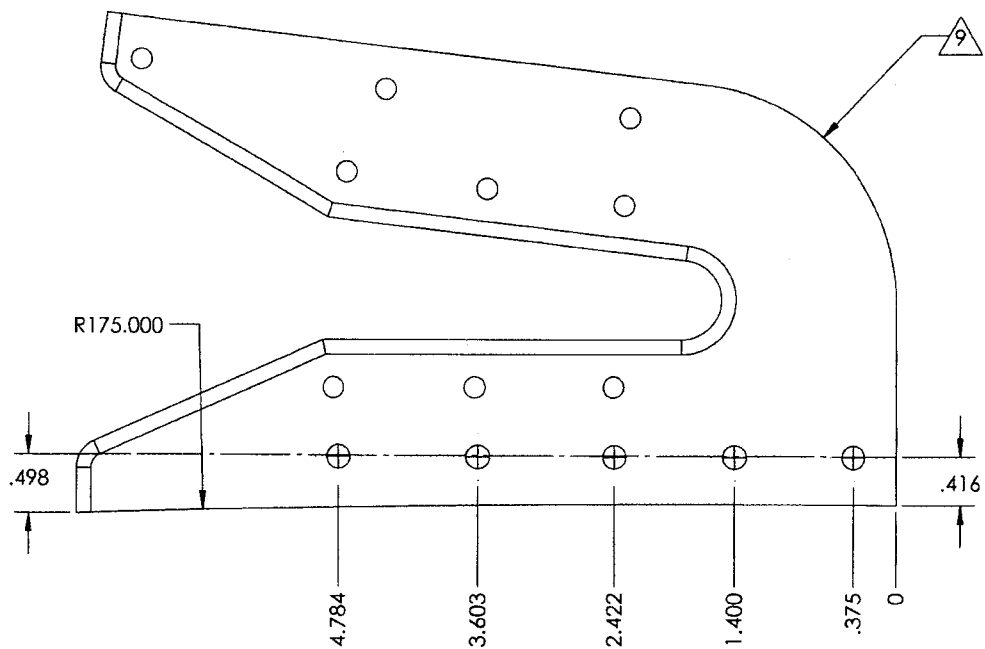
646.9712

ORIGINAL DATE (M/D/YR)	05-29-99	 DART AEROSPACE APICAL INDUSTRIES INC. 3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760)-724-5300
DRAWN BY	CHECKED BY	
DESIGNED BY	REVIEWED BY	
DRAWING APPROVAL	DATE	
PL. REV. NO.		
CONTACT NO.		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES 3/16 INCHES = 1"		
2 PLACES DECIMALS ±.01 3 PLACES DECIMALS ±.001 4 PLACES DECIMALS ±.0001		
SCALE NONE		
SHEET 6 OF 7		

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646.9713



ORIGINAL DATE INC-DA-159 05-29-09		3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300			
DRAWN BY P. POSANO	CHECKED P. BRAVO	DART AEROSPACE APICAL INDUSTRIES INC. DBA DART AEROSPACE			
DRAWING APPROVAL P. BRAVO	DATE 05-29-09				
CONTRACT NO.					
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SHEET B	CAGE CODE 07M26	DWG. NO. 646.9700	REV. D
SCALE NONE		SHEET 7 OF 7			



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO32573**

Purchase Order Date 6/2/2016

PO Print Date 6/2/2016

Page Number 1 of 2

Order From :
A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

VC-ATG001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

REVISED

Contact Name
Vendor Phone 613-446-4544

Ship To Contact
Ship To Phone
Ship Via: VENDOR'S TRUCK
Ship Acct:

Buyer
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
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1	140993	646.2910 DEFLECTOR REV. N/C	6/10/2016		12.00	\$48.00	\$576.00
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Yes

6/10/2016

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE 1 CLASS N

Line Total: \$576.00

2	145351	646.9710 BODY REV. D	6/10/2016		12.00	\$14.50	\$174.00
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Yes

6/10/2016

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE 1 CLASS N

Line Total: \$174.00

Sp/6-6-13

Note:

6/2/2016



A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE STREET
ROCKLAND, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 911821

Date: 10-Jun-16

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

CHANTAL LAVOIE
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
Quantity	Description		
	PLEASE REFERENCE THE PACK LIST NUMBER ON ALL CORRESPONDENCE TO THIS SHIPMENT. IF YOU HAVE ANY QUESTIONS, PLEASE CALL AT (613) 446-4544.		
12 ea	Part: 646.2910 Deflector Job: 19591	PO: 32573	Rev: N/C Line: 1
12 ea	Part: 646.9710 BODY Job: 19592	PO: 32573	Rev: D Line: 2
1 ea	Part: ADMINISTRATION FEE ADMINISTRATION FEE Job: 19593	PO: 32573	Rev: Line: 4
DATE: <u>10/6/16</u> CERTIFIED SIGNATURE: <u>[Signature]</u> RECEIVER SIGNATURE: _____			
Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.			
CERTIFICATE OF CONFORMANCE			
A.T.G. INDUSTRIES INC. CERTIFIES THAT ALL ITEMS IN THIS SHIPMENT CONFORM TO REQUIREMENTS.			
MADE IN CANADA.			